

Claims

1. A camera-equipped mobile terminal, comprising a camera module, a control unit, a display device, an interface unit arranged between said camera module, said control unit and said display device,
said camera module including a camera sensor that records with a resolution of a first number of pixels and provides a picture signal in a first format corresponding to a picture that has been shot, a digital signal processor that performs image processing on said picture signal and an external memory having a power supply that is turned off in a mobile camera mode,
- 5 said digital signal processor including an analog/digital converter that converts said picture signal to a first image data, an internal memory, an encoder that performs compression-coding processing to convert said first image data into a second image data, a resize processing unit that resizes said first image data into a third image data having a second number of pixels, and a format transforming unit that transforms said third image data into a fourth image data in a second format and supplies the fourth image data to said interface unit via a first bus to display said fourth image data on said display device for a camera finder,
- 10 wherein said encoder, in a digital camera mode, executes, after said first image data has been temporarily buffered into said external memory, the compression-coding process on said first image data read from said external memory to produce said second image data in a time-division manner using said internal memory as buffer, during a vacant time period in which no process is performed in said resize processing unit and said format transforming unit, and then stores said second image data in said external memory; and in a
- 15 mobile camera mode, executes, after said first image data has been
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temporarily buffered into said internal memory, the compression-coding process on said first image data read from said internal memory to produce said second image data in a time-division manner using said internal memory as buffer during said vacant time period, and then stores the second image

30 data in said internal memory, and

said control unit, in the digital camera mode, captures said second image data stored in said external memory via a second bus and said interface unit, as required, and in the mobile camera mode, captures said second image data stored in said internal memory via said second bus and said interface unit,

35 as required.

2. A camera-equipped mobile terminal according to claim 1, wherein said external memory has a multi-buffering configuration in said digital camera mode.

3. A camera-equipped mobile terminal according to claim 1, wherein said encoder, in said digital camera mode and said mobile camera mode, performs said compression-coding processing of one frame of image data during a vacant time period in a time period during which three frames of image data are

5 processed in said resize processing unit and said format transforming unit.

4. A camera-equipped mobile terminal according to claim 1, wherein, in said digital camera mode and said mobile camera mode, when continuous shooting, in which still pictures are continuously taken, is required, said digital signal processor, while said control unit is capturing a frame of said second

5 image data, starts to buffer the next frame of said second image data into said

external memory,

5. A camera-equipped mobile terminal according to any one of claims 1 through 3, wherein when processing moving image data in said digital camera mode, said digital signal processor successively reads said first image data temporarily stored in said external memory for every plurality of frames and
- 5 successively stores said second image data, subjected to the compression-coding process performed by said encoder, in said external memory, and on completion of said compression-coding process, notifies said interface unit and said control unit that the compression-coding process has been completed for every key frame of said second image data.

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6. A camera-equipped mobile terminal according to any one of claims 1 through 3, including a streaming supply mode in which, when moving image data are processed in said digital camera mode, a dedicated bus is provided between said camera module and said interface unit, though which said digital
- 5 signal processor supplies said moving image data to said interface unit as streaming data, as requested by said control unit.

7. A camera-equipped mobile terminal according to claim 6, wherein said interface unit further comprises a first-in first-out memory to capture said moving image data.